

6-8: Imaginary Numbers

Warmup: Simplify the following:

1. $(2\sqrt{3})^2$

2. $(-3\sqrt{2})^2$

3. $\sqrt{6} \cdot \sqrt{15}$

4. $\sqrt{-100}$

Definition:

BIG QUESTION: WHAT IS $\sqrt{-k}$?

Imaginary Number:

Theorem:

Example 1: Solve $x^2 = -100$.

Example 2: Show $i\sqrt{7}$ is a square root of -7 .

Example 3: Simplify.

a. $\sqrt{-4} - \sqrt{-49}$

b. $(6i)(4i)$

c. $\sqrt{-32} + \sqrt{-2}$

d. $\frac{\sqrt{-25}}{\sqrt{-81}}$

Example 4: Simplify.

$\sqrt{-36} \cdot \sqrt{-64}$

Homework:

"They can because they think they can." - Virgil